

Digital Storytelling as a Method in Health Research: A Systematic Review

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Abstract

Digital storytelling aims to illuminate complex narratives of health and illness when used as a method in health research. Digital stories are three to five minute videos that integrate written and narrated stories with multiple aesthetic components. There is increasing interest in digital storytelling as a research method, yet there is limited synthesized knowledge about its use. A systematic review to advance methodological understanding was warranted. Our systematic review purpose was to identify and synthesize evidence on the use, impact, and ethical considerations of digital storytelling as a method in health research. Key databases and online sources were searched for qualitative, quantitative, and mixed methods studies using digital storytelling. Articles with pediatric or adult populations, family members, or healthcare professionals were included. The focus was on digital storytelling in health research, where it was used as a method, at any point in the research process. Two independent reviewers screened abstracts and full texts to confirm eligibility. We conducted a narrative synthesis of the extracted narrative data. The searches yielded 7285 articles. Following the removal of duplicates and screening, 46 articles met the inclusion criteria, which predominantly used qualitative methodology. An analysis of the extracted data resulted in seven descriptive themes which provided insight into the purpose, definition, process, context, impact and ethical considerations of this method. Digital storytelling is an empowering and disruptive method that captures voice through a process-oriented, flexible approach. It is particularly effective at honouring local and cultural knowledge, and evoking change. Researchers have used consistent facilitation approaches, but theoretical inconsistency, diverse positioning in analysis, and ethical complexity remain significant challenges. These findings provide methodological insight for applying digital storytelling in future research. Systematic review protocol registration: CRD42017068002.

Keywords

arts based methods, methods in qualitative inquiry, qualitative meta analysis/synthesis, community based research, narrative

Background

Digital storytelling is an arts-based research method that combines the art of storytelling with the power of technology (De Vecchi et al., 2016; Gubrium, 2009a; Rieger et al., 2018). Although digital storytelling is increasingly being used, its application as a specific method has not been fully articulated, leaving researchers with limited guidance about how to effectively integrate it within the research process. We conducted a systematic review on digital storytelling's use, impact, and ethical considerations in health research. For this review, digital storytelling was defined as a facilitated process of capturing personal stories through the production of a three to five minute multimedia digital video (Lambert, 2013).

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Participants write and record a story and commonly add images and music to convey poignant moments of meaningful personal life experience (Gubrium, 2009a).

Digital storytelling came to prominence through the work of Lambert and colleagues at StoryCentre in Berkley, California. In establishing the Centre, they combined their skills in media production and the arts to create stories using digital technology (Lambert, 2009). Drawing heavily on cultural democracy and the power of stories to create change (Hartley & McWilliam, 2009), their approach primarily involves workshops which include story sharing and feedback, script work and image preparation, recording scripts, digital editing, and story screening. This method aligns with the visual revolution, where multimedia consumption, creation, and sharing have significantly influenced how people cognitively process and understand information.

The use of digital storytelling in community development is well established (de Jager et al., 2017), and there is an increasing body of literature exploring its potential as a research method. In healthcare, researchers have described digital storytelling as evocative, empowering, and impactful (De Vecchi et al., 2016). Internationally, there is also a growing emphasis on research impact and rapid translation of knowledge to policy and practice (Rieger & Schultz, 2014; Williams & Grant, 2018). Scholars have described the potential of digital storytelling as an innovative knowledge translation approach for impact beyond academic publications (de Jager et al., 2017; De Vecchi et al., 2016).

Digital storytelling has been used in diverse healthcare fields, including mental health (De Vecchi et al., 2016; De Vecchi et al., 2017), oncology (Akard et al., 2015; Cueva et al., 2016), sexual health promotion (Guse et al., 2013), and refugee health (Lenette & Boddy, 2013; Lenette et al., 2019; Vecchio et al., 2017). However, the complex methodological and ethical challenges associated with digital storytelling as a method in healthcare research have not been fully explored.

Previous Reviews of Digital Storytelling

We located several related reviews. A literature review by Wilson, Hutson and Wyatt (2015) focused on the reflective processes and therapeutic effects of digital storytelling in pediatric oncology. In mental health, De Vecchi and colleagues (2016) completed a scoping review where 15 digital storytelling studies were categorised across four broad areas: education, learning skills, learning about other people's lived experience, and learning about personal lived experience. They noted that researchers have not utilised the full potential of the method in knowledge translation.

In a broad systematic review of digital storytelling in research, de Jager and colleagues (2017) identified 27 studies and outlined key aspects and uses of the method. Their review was not focused on health research, and they only included studies that closely resembled the process described by Lambert (2006, 2009, 2010, 2013). No validated quality

appraisal tool was used in their review, and their discussion of ethical issues was limited (de Jager et al., 2017). In other reviews, the use of digital storytelling has been explored in sexual health and wellbeing amongst young people from migrant and refugee backgrounds (Botfield et al., 2018), in social work practice (Chan & Sage, 2021), and education (Wu & Chen, 2020).

Given the limited synthesized knowledge on digital storytelling in health research, the aim of this systematic review was to identify and synthesize evidence on the use, impact, and ethical considerations of digital storytelling as a method.

Methods

Our published protocol (Rieger et al., 2018) guided this review. The review questions were: (1) What is known about the purpose, definition, use (processes), and contexts of digital storytelling as part of the research process in health research? (2) What impact does digital storytelling have on the participants, research process, knowledge development, and healthcare practice? and (3) What are the key ethical considerations when using digital storytelling within qualitative, quantitative, and mixed-methods research studies? We used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) for reporting (Page et al., 2021). The review is unique as it focused on a research method rather than a study phenomenon (McCrae & Purssell, 2016).

Inclusion and Exclusion Criteria

Inclusion criteria are outlined in Table 1. The date range for included studies was 1990 - 2019. Only articles from peer-reviewed journals written in English (Morrison et al., 2009) were included. The term *impact* was interpreted as influence, understanding, and negotiated meaning from the digital storytelling process rather than measurement of pre-determined outcomes. Studies were excluded if digital storytelling was solely used as a therapeutic or pedagogical intervention.

Search Strategy

An expert healthcare librarian designed and conducted database searches of MEDLINE (Ovid), CINAHL (EBSCOhost), PsycINFO (ProQuest, Ovid), EMBASE (Ovid), Academic Search Complete (EBSCOhost), Web of Science [Social Sciences Citation Index and Arts & Humanities Citation Index] (Clarivate Analytics), CENTRAL [Cochrane Central Register of Controlled Trials] (Wiley), Art Full Text (EBSCOhost), and ArtBibliographies Modern (ProQuest). The search strategy was initially developed for MEDLINE and translated for each additional database, according to the subject coverage and differing search functions. The search was first conducted in December, 2017 and then updated in November, 2019. A broad Google search was undertaken to identify any potential articles missed in the database search.

Table 1. Inclusion Criteria.

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- (1) Quantitative, qualitative, and mixed methods study designs.
 - (2) Articles published in English.
 - (3) Population: Pediatric or adult populations, their families, and/or healthcare professionals.
 - (4) Intervention: primary research studies that use digital storytelling as a method at any point in the research process (i.e., recruitment, data collection, data analysis, knowledge translation). Digital storytelling is defined as a creative arts process that is used to capture personal stories, using images, sound, and other multi-media materials in a three to five minute digital clip.
 - (5) Context: health research, which includes research conducted in healthcare settings (e.g., clinics, hospitals, community outreach, home visits) or by medical, nursing, or allied healthcare, in any geographical location.
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Details of the search strategies can be found in the [Supplementary File 1](#).

Study Selection, Data Extraction, and Synthesis

Retrieved articles were imported into [Covidence \(2022\)](#), and following duplicate removal, two reviewers independently screened titles/abstracts against inclusion criteria. Full texts were read to confirm eligibility, with all disagreements resolved through discussion. One researcher extracted data from included studies with a pre-designed standardized data extraction form ([Supplementary File 2](#)), and a second member of the team checked the extracted data. The form was pilot tested on five articles and revised in consultation with research team members. As this was a methodological review, the focus was on synthesizing elements of the study process to identify use, impact on the research process and participants, and ethical considerations. We conducted a narrative synthesis ([Mays et al., 2005](#)) of the extracted narrative data. Data was coded by two reviewers, and similar codes were clustered to form descriptive themes to answer our review questions. Throughout the analysis, we moved back and forth between the extracted data and the full texts of the included articles. Iterative discussion with research team members was ongoing to extend the initial analysis. The Joanna Briggs Institute Checklist for Qualitative Research ([Joanna Briggs Institute, 2017](#)), the Mixed Methods Appraisal Tool ([Gagnon et al., 2018; Hong et al., 2018](#)), or the EPHPP Quality Assessment Tool for Quantitative Studies ([Thomas et al., 2004](#)) were used for quality appraisal. If two or more articles were published from the same study, we only conducted a critical appraisal on the paper with the most richly described methods.

Results

Following duplicate removal, 5066 titles/abstracts were screened against the inclusion criteria, and 46 articles were included in the final data set (see [Figure 1](#), PRISMA flow diagram).

Study Characteristics

Details on the 46 included articles are included in [Table 2](#). Articles were assigned a number, and the numbers cited correspond with the article number in [Table 2](#) [1-46]. Methods

used in the studies were predominantly qualitative ($n = 44$), with one mixed methods and one quantitative study. A total of 18 studies (39.1%) were conducted in the United States, 16 (34.8%) in Canada, five (10.9%) in Australia, three (6.5%) in South Africa, two (4.3%) in New Zealand, and one each in Northern Ireland (2.2%) and Peru (2.2%). Only one study (2.2%) was published before 2011, 11 (23.9%) between 2011 – 2015, and 34 (73.9%) between 2016 – 2019. Participant numbers varied, with 39.1% ($n = 18$) of studies including 10 or fewer participants, 26.1% ($n = 12$) including 11 to 20 participants, 13.0% ($n = 6$) including 21-30 participants, 8.7% ($n = 4$) 31-40 participants, and 13.1% ($n = 6$) including 41 or more participants. Where the study focused on specific cultural groups, these included Indigenous communities [5,10-12, 20-22, 32, 33, 36, 41, 43, 44, 46] and participants who were African [8, 17], Caribbean [8], South African [18, 29, 38, 39], Hispanic/Latino [1, 4, 9, 15, 16, 24, 27], rural Peruvian [30] and Afghani [29]. Most researchers ($n = 23$; 50.0%) used digital storytelling as a data collection and knowledge translation strategy within the research process, but some ($n = 20$; 43.4%) employed digital storytelling as only a data collection method. Three researchers (6.5%) used digital storytelling for knowledge translation alone.

Quality Appraisal of Studies

We appraised the methodological quality of the qualitative studies with the JBI Checklist for Qualitative Research ([Joanna Briggs Institute, 2017](#)). Overall, no studies met all the appraisal criteria ([Supplementary File 3](#)), but 63.2% of the studies met eight or nine of the ten criteria. The majority of studies demonstrated congruity between the research methodology and the research question (81.6%; Q2) and methods used to collect data (84.2%; Q3). Most studies (84.2%) had conclusions that flowed from the analysis, or interpretation, of the data (Q10). Weaknesses identified in the quality appraisal included the following: only 63.2% of authors included a description of clear congruity between the stated philosophical perspective and research methodology (Q1), only 68.4% between the research methodology and interpretation of results (Q5), and the researchers influence on the research was only discussed by 39.5% of authors (Q7). We assessed one mixed-methods study [39] with the Mixed Methods Appraisal Tool ([Gagnon et al., 2018; Hong et al., 2018](#)). The study

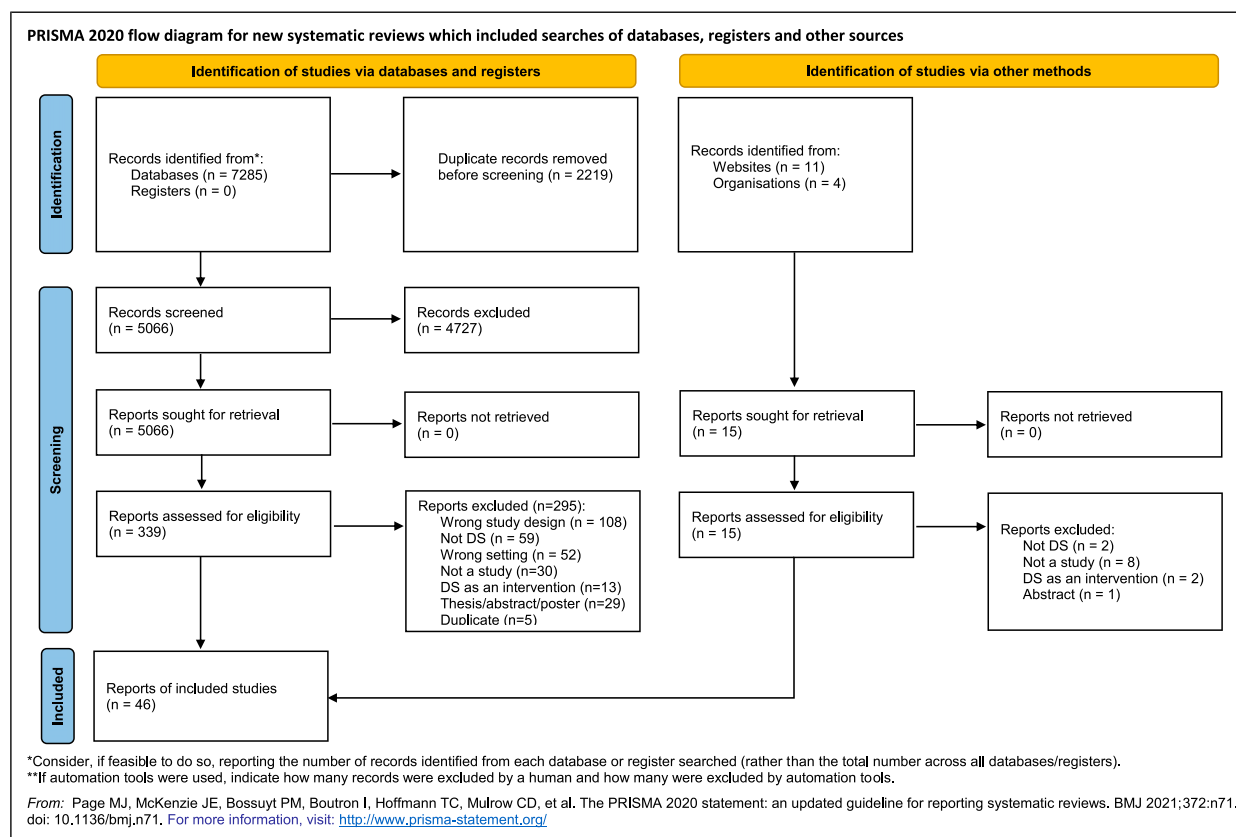


Figure 1. PRISMA 2020 flow diagram.

components were well integrated, interpretation was clear, and divergencies and inconsistencies between the different methods were noted and discussed. Adherence to the quality criteria for qualitative and quantitative studies was evident, but detail on data analysis was limited. Lastly, one study [27] was assessed with the EPHPP Quality Assessment Tool for Quantitative Studies (Thomas et al., 2004) and received a moderate score, as it was a one-group pre-test-post-test study. Although the authors considered confounding variables and used valid/reliable measurement tools, their participant selection and blinding processes were unclear.

Analytic Findings

An analysis of the extracted data resulted in seven descriptive themes which are described below.

Digital Storytelling: An Empowering and Disruptive Method. Consistent with our review criteria, most authors described digital storytelling as short videos combining images, voice, and music commonly produced in workshops. A few authors used terms such as first-person narratives [1], visual narratives [4], a tool for social connectedness [37], a culturally grounded qualitative research tool [38], a critical narrative intervention [15], or a 'multisensory tool for realising narrative shock' [24]

(p. 425). Other descriptions included: a culturally sensitive method [2, 4, 7, 45] that assisted in the communication and disruption of intergenerational trauma [2], a democratic process that disrupted tension and opened new understanding [6], an empowerment method of engaging participants as partners with expertise [31] and a powerful arts-based inquiry method that amplified voice, facilitated aesthetic engagement/significance [6, 7] and supported identity and world-making processes [7]. In a study exploring the experiences of women who were refugees [28] digital storytelling was conceptualized as a visual ethnographic method, and in another study, as an empowerment research method with young women who had experienced dating violence [31].

Consistent Facilitation Approaches amongst Theoretical Inconsistency. The digital storytelling approach developed by *StoryCenter* (Lambert, 2006, 2009, 2010, 2013) [1, 2, 6-9, 12-16, 19, 31, 34, 35, 37-39, 44, 45] was described by most authors, however, in seven studies [11, 25, 26, 29, 33, 36, 43] no explicit description of the facilitation process was provided. The authors modified the *StoryCenter* approach in five studies by integrating Indigenous cultural protocols [2, 12, 33, 45] and/or ceremony [12]. The work of Gubrium and colleagues (Gubrium, 2009a, 2009b; Gubrium, Fiddian-Green, & Hill, 2016; Gubrium et al., 2014; Gubrium & Harper, 2013; Gubrium & Turner, 2011) was cited in fourteen of

Table 2. Description of Included Studies.

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|---|--|---|---|---|--|---|--|---|
| Barcelos and Gubrium, 2018 [1], US | Pregnant or parenting Latino youth (93.5%) N = 31 | Community | To facilitate embodied knowledge of pregnant and parenting young women | Feminist hegemonic discourse lens | Visual, participatory methodology | StoryCenter approach, 4 days of workshops https://www.storycenter.org/ | Digital stories analyzed using intertextual transcription | Data collection and knowledge translation |
| Beltrán and Begun, 2014 [2], New Zealand | Indigenous – Māori N = 6 | Community; Digital storytelling workshops held at the University of New Zealand | To elicit stories of resiliency amidst historical trauma within the Māori community | Historical trauma theory and Indigenous epistemology | Indigenous methodology and qualitative research design | Culturally adapted digital storytelling workshops using StoryCenter approach, 4 days of workshops | No analysis of the digital stories | Data collection and knowledge translation |
| Boydell et al., 2017 [3], Canada | Youth living with psychosis N = 9 | Rural community, Northwestern Ontario | To produce digital stories of managing psychosis in everyday life | Participation (theoretical construct): importance of listening and celebrating youth voices | Participatory inquiry | An immersive workshop-based approach (Burgess, 2006; Gubrium, 2009b) | Digital stories analyzed collaboratively by participants and researchers for 3 days, 2 weeks post-workshop | Data collection |
| Briant et al., 2016 [4], US | Hispanic/Latino of Mexican Origin (rural, underserved area) N = 11 | Community, Fred Hutchinson Cancer Research Center's Center for Community Health Promotion | Digital storytelling used as a health promotion method to address inequities, explore if digital storytelling is a culturally relevant knowledge translation tool | Health promotion, health inequity | Community-based participatory action research and a narrative framework | Creative Narrations (national organization), 2 hour weekly workshop meetings, for 5 weeks https://www.creativenarrations.net/ | No analysis of digital stories, focused on participant impact | Data collection |
| Cordova et al., 2015, US [5] | Indigenous-Hopi women (Native American), breast cancer survivors, staff and community health workers N = 18 | Community (reservation setting) | Digital stories compiled into a DVD "Breast Cancer Digital Stories: Survivors and Families" (p. 105) for community education in the Hopi Tribe | Native tradition of storytelling for sharing of culture and knowledge | Community-based participatory research | Digital storytelling session (timing and individual/group session not specified) (Burgess (2006) and Crogan et al. (2008)) | Digital stories not analyzed, focus group themes used to create digital stories, and compile the DVD | Knowledge translation |
| De Vecchi et al., 2017 [6], Australia | Mental health consumers, carers, and clinicians N = 11 | Community (regional Australia) | To explore digital storytelling process as a method for creating dialogue between diverse stakeholders in mental health | Freire's (1996) 'Pedagogy of the oppressed' | Interpretive paradigm, process evaluation framework, case study approach | StoryCenter approach – 3 days of workshops | Digital stories not analyzed; The analysis was focused on the workshop process; explored workshop documents, post-workshop qualitative interviews and the facilitation process | Data collection |

(continued)

Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/ philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|--|--|--|---|---|---|--|--|--|
| Eglinton et al., 2017 [7], US | Indigenous Alaska Native youth N = 31 | Community, Rural (Alaska) | To explore potential of digital storytelling for helping researchers/ practitioners/ communities understand and support Indigenous youth | Social constructionist framework | Methodological findings/discussion of digital storytelling as an arts-inspired approach | StoryCenter approach – week long, after school workshops | Digital story analysis not described here, but refer to an associated article where exemplar digital stories were analyzed using a 'multimodal' process [43] | Data collection |
| Ferrari et al., 2015 [8], Canada | African, Caribbean, European participants, first treatment for psychosis, frontline staff N = 15 | Community | Digital stories were used as a knowledge transfer tool for study findings | Not identified | Thematic analysis | StoryCenter, distinguish approach as 'multi-media storymaking' (Rice & Mündel, 2018) | Digital stories were not analyzed. Two surveys (workshop evaluation, therapeutic benefits) | Knowledge translation |
| Fiddian- Green et al., 2017 [9], US | Puerto Rican/ Latino Youth N = 30 | Community agency setting (in a city) | Cultural paradigms of youth sexuality. Digital storytelling component focused on increasing support and agency related to sexual health | Social construction, critical power- focused analysis | Ethnographic approach, case study methodology, and constructivist grounded theory | StoryCenter approach – 4 days of workshops | Digital stories analyzed using intertextual transcription | Data collection |
| Fletcher & Mullett, 2016 [10], Canada | Indigenous youth research team (N = 8), youth participants (N = 230) and Elders (N = 14) from First Nations communities | Community (BC) | Intergenerational knowledge sharing about health lifestyles and increasing youth self- esteem through celebrating identity, cultural practices, community connection using digital storytelling | Iterative, participatory evaluation process | Participatory action research | Digital storytelling training workshops (3 days) (knowledge sharing by Elders, digital storytelling training by researchers). Returned to communities to develop digital stories, re-convened to create digital stories. One year later, researchers visited communities to provide education on the digital storytelling process. <i>Digital Stories Training Manual.</i> | Digital stories were analyzed, but there was limited description (story themes') | Data collection and knowledge translation |

(continued)

Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|--|--|---|---|---|--|--|--|---|
| Flicker et al., 2019 [11], Canada | First Nations youth leaders who were HIV positive, close to someone who was HIV positive, or an exemplary activist N = 18 | Community | To promote HIV activism amongst youth Indigenous leaders | Indigenous, narrative/storytelling paradigm (viewed as historical and political, and Indigenous resistance) | Indigenous methodology | Digital storytelling retreat (1 week) integrating cultural ceremony, showed digital stories in communities over next year, returned for a second retreat. (Gubrium (2009a) , Gubrium et al. (2014) and Lambert (2013)) | Digital stories analyzed by youth leaders (participants) using thematic analysis. All themes named by youth participants | Data collection |
| Fontaine et al., 2019 [12], Canada | Indigenous, Northern Manitoba First Nations women N = 6 | Community (digital storytelling workshops held in Manitoba) | Honour Indigenous traditions and storytelling to elevate Indigenous knowledges and practices, as well as challenge dominant narratives. Used digital storytelling to create a safe space to facilitate the telling of stories that had not been shared. | Indigenous paradigm, storytelling | Indigenous methodology, Kovach's conversational method (Kovach, 2009) | StoryCenter approach with integration of Indigenous ceremony, feasts and learning circles – 5 days of digital storytelling workshops | Digital stories and learning circle transcripts analyzed using Kovach's (2009) conversational method (dialogic process) by researchers (participants had returned to their communities). | Data collection and knowledge translation |
| Goodman, 2019 [13], Canada | Long-term heroin users N = 10 | Community Heroin Assisted Treatment Program (Urban, BC) | Used digital storytelling to challenge dominant visual narratives about long term heroin users, and to amplify their voices | Social humanitarian lens, human rights abuses | No specific methodology identified beyond StoryCenter practices and previous journalism, documentary work (participatory approach) | StoryCenter approach – 3 days of workshops | Digital stories were reported on, described, analyzed using multimodal elements; asked about digital story themes in post-workshop interviews | Data collection and knowledge translation |
| Goodman, 2013 [14], US | Adolescent females (14-20yrs) with history of self-injury N = 7 | Community | Use digital storytelling to share the experiences of adolescent females who self-injure, while exploring the potential of digital storytelling for use in amplifying the voices of this population | Humanistic Nursing Theory of Paterson and Zderad (1976/1988) | Phenomenology | StoryCenter approach – 4 sessions (time of each session not specified) | Limited description or analysis of the digital stories created | Data collection |

(continued)

Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/ philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs (translation or both) | DS Use (data collection, knowledge translation or both) |
|--|--|-----------|--|---|--|--|---|--|
| Gubrium, Fiddian- Green et al., 2019 [15], US | Puerto Rican youth/young adult women (15-20yrs) N = 30 | Community | Articulate cultural understandings of social health, exploring how identity is informed by social relationships, life experience while simultaneously informing intervention development | Co-construction, critical lens | Qualitative approach, narrative analysis | StoryCenter approach – 4 days of workshops | Digital stories were analyzed using intertextual transcription | Data collection |
| Gubrium et al., 2018 [16], US | Pregnant or parenting Puerto Rican adolescents and young women N = 40 | Community | To explore digital storytelling for potential use as a narrative intervention | Reproductive justice framework, cite intersectionality theory | Qualitative approach | StoryCenter approach – 4 days of workshops | Digital stories were analyzed using intertextual transcription | Data collection and knowledge translation |
| Gubrium et al., 2020 [17], US | Low-income, African American men N = 36 | Community | Three distinct aims: 1. Use digital storytelling to extend the Minority Stress Model (Graham, 2012), 2. Develop digital stories for integration and narrative enhancement of the MOCHA program, and 3) to study digital storytelling as an intervention | Knowledge co- construction; Minority Stress Model (Graham, 2012) | Community based participatory research | Workshop process similar to StoryCenter, but referenced Gubrium, Fiddian Green, Lowe et al. (2016) | No specific information related to analysis of digital stories (this article focused on ethical challenges encountered with digital storytelling) | Data collection and knowledge translation |
| Haffee & Theron, 2019 [18], South Africa | Adolescent, South African girls (15- 18yrs) with history of child sexual abuse (CSA) N = 7 | Community | To explore what enables and limits resilience processes in South African adolescent girls who have experienced CSA, with a particular focus on agency as an internal process of resilience | Emancipatory critical paradigm (Mash, 2014) | Qualitative instrumental case study design | Unspecified 'participatory video approach' – no length, or reference provided | Digital stories were transcribed and analyzed using inductive thematic analysis | Data collection and knowledge translation |

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Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/ philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|-------------------------------------|--|-----------|---|--|--|--|--|---|
| Hall et al., 2016 [19], Australia | Youth of 'Headspace Service' (mental health) N = 3 | Community | How youth foster mental health, identification of occupational factors that promote positive mental health | Interpretive paradigm Theoretical Framework: Canadian Model of Occupational Performance and Engagement (CMOPE) (Law et al., 2007) | Interpretive description | StoryCenter approach – individual workshops due to difficulty with logistics for group workshop | Digital stories were analyzed using interpretive description and CMOPE (theoretical lens) | Data collection |
| Holliday et al., 2018 [20], US | American Indian and Alaska Native Youth (14-20yrs) (living on reservation) N = 148 | Community | To identify the needs, strengths and challenges of American Indian and Alaska native communities with an aim of preventing suicide and substance abuse among youth | Participatory paradigm | Community based participatory research | No specific approach referenced – digital stories created over 6 hours | Digital stories analyzed using thematic content analysis (Braun & Clarke, 2006) by community advisory board members and university researchers | Data collection and knowledge translation |
| Jernigan et al., 2012 [21], US | Patients, parents, teachers, the Elders group, and business owners from a Native American community N = 40 | Community | To study food insecurity in a Native American community by adapting the <i>Tool for Health and Resilience in Vulnerable Environments (THRIVE)</i> (Prevention Institute, 2009) using digital storytelling with an aim to ensure local relevance | Participatory design | Community based participatory research | Digital storytelling integrated into a community assessment tool (referenced Gubrium, 2009a) | Digital stories were not analyzed; used as triggers within focus groups | Data collection and knowledge translation |
| Kandasamy et al., 2017 [22], Canada | Indigenous women from the Six Nations of the Grand River (middle aged to elder women) N = 18 | Community | To study the perinatal health beliefs of elder women from the Six Nations of the Grand River | Indigenous epistemology was integrated with constructivist grounded theory approach | Constructivist grounded theory | Digital story created by researchers with an Indigenous artist, included a spoken word (poem) created by a Six Nations woman | Digital story not analyzed, but used to translate findings from interviews, focus groups | Knowledge translation |

(continued)

Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/ philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|-----------------------------------|---|--------------------------------|---|--|----------------------------------|--|---|---|
| Kent, 2016 [23], Northern Ireland | Low-income community members N = 80 | Community | Amplify and engage community voices related to poverty and social inclusion to stimulate debate and inform policy | Community focused lens: communities viewed as knowledge producers and agents of change | Participatory action research | 'Purposeful story-telling' process (researcher developed), tailored to community self-advocacy and collective storytelling (p. 129) | Digital stories not analyzed | Data collection and knowledge translation: digital stories used in 'data sharing' and dissemination of analyzed community conversations |
| Krause & Gubrium, 2019 [24], US | Parenting Latino young women N = 28 | Community | To explore how young mothers negotiate health disparities through a focus on their experiences of migration and movement | Critical discourse with a focus on social inequality | Qualitative descriptive approach | Digital storytelling approach based on Gubrium and Harper (2013) – 4 days of workshops | Digital stories were analyzed using intertextual transcription | Data collection and knowledge translation |
| Laing et al., 2017 [25], Canada | Children and adolescents/adults with cancer N = 16 | Large urban acute care setting | 1) To understand the impact of digital storytelling with children, adolescents and young adults who have cancer or are cancer survivors 2) To explore the potential use of digital storytelling as a therapeutic tool in this population | Interpretive methodology (philosophical hermeneutics) | Philosophical hermeneutics | Digital storytelling approach not specifically identified (StoryCenter website cited) – 3, 2hr digital storytelling sessions with a research assistant | Digital stories were not analyzed; the research notes taken during digital story creation were analyzed | Data collection and knowledge translation |
| Laing et al., 2019 [26], Canada | Adult cancer survivors (active treatment or follow up care) N = 18 | Large urban acute care setting | To understand the meaning and impact of digital storytelling for adult patients with cancer (past or present) | Interpretive methodology (philosophical hermeneutics) | Philosophical hermeneutics | Three digital storytelling sessions (2 hours) with a research assistant; Reference StoryCenter and Lal et al. (2015) | Digital stories were not analyzed | Data collection |
| Larkey et al., 2018 [27], US | Latino teens N = 30 | Community | Latino teens viewed and evaluated other participants' digital stories (focused on sexual, relational, pregnancy, and/or parenting experiences) using the Narrative Qualitative Assessment Tool (Kim et al., 2017) (emotional engagement, identification, desire to act in my community) | Quantitative paradigm | Quantitative evaluation | Specific digital storytelling approach beyond 4 days of digital storytelling workshops was not specified (referenced Gubrium, Fiddian-Green, and Hill, 2016) | Digital stories were not analyzed as part of this report | Data collection |

(continued)

Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/ philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|--|---|-----------|--|--|---|--|--|---|
| Lenette & Boddy [28], 2013, Australia | Single refugee women (divorced or widowed) N = 8 | Community | To explore the lived experiences of single, refugee women (divorced or widowed) who had resettled in Brisbane, Australia | Feminist philosophy, intersectionality theory | Visual ethnography | Digital storytelling approach not specified, referenced Gubrium (2009a) (individual digital story creation with researcher) | Digital stories were analyzed but no detail beyond visual ethnography provided | Data collection |
| Lenette et al., 2019 [29], Australia | Refugee women at risk of harassment, victimization or gender-based abuse) N = 4 | Community | To document refugee women's experiences of arriving in Australia as part of the Women at Risk program/visas | Co-construction of knowledge | Narrative, identified digital storytelling as a methodology | Digital storytelling project (6 months): pre-workshop phase, digital storytelling workshop, collaborative development of script, finalising digital stories and viewing with each participant. Referenced De Vecchi et al. (2016) and Lambert (2010) | Digital stories not analyzed; descriptions of each individual, full story with text and photos included | Data collection |
| Limaye et al., 2018 [30], Peru (Peruvian Amazon) | Community health workers (n = 18) and 10 Peruvian women with pregnancy experience, and one government health worker N = 28 | Community | To improve prenatal health knowledge, awareness of pregnancy danger signs, and address community-specific barriers to seeking care during pregnancy in the Parinari District (Peruvian Amazon) | Sequential exploratory mixed-method study design | Community-based participatory research | Using research themes, held community-based digital storytelling activities, included storyboarding. Referenced Gubrium (2009a) and participatory video (Lunch & Lunch, 2006) | Digital stories not analyzed, created by participants, refined by researchers, selectively chosen for a digital story (knowledge translation) | Data collection and knowledge translation |
| Martin et al., 2019 [31], Canada | Young women (over 18yrs age) exposed to dating violence in the 2 years prior to the study N = 10 (only 6 participated in entire project; some only participated in interview phase) | Community | To study the potential use and impact of digital storytelling as a disruptive intervention and methodology for exploring young women's experience of early dating violence | Feminist, participatory | Qualitative, arts-based research methodology | Storycenter approach, 2 days of workshops, narrative preparation with two qualitative research interviews prior to digital storytelling workshops; digital storytelling described as an empowerment research method | Digital stories were analyzed or at least reported on; no specific information about the analysis beyond use of qualitative, feminist, arts-based research methodology | Data collection |

(continued)

Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/ philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|---|--|-----------|--|---|--|---|--|--|
| Monchalín et al., 2016 [32], Canada | First Nations young people N = 18 | Community | Explored how Indigenous youth leaders who participated in a community-based research project enacted the concept of leadership in HIV prevention; digital storytelling framed as a public health intervention and decolonizing approach for research | Indigenous | Community- based participatory action research | Digital storytelling retreat (1 week), 4 months of preparation that included digital storytelling tools, guidance, and teleconference calls. Referenced Gubrium (2009a), Gubrium et al. (2014) | Digital stories not analyzed, interviews after digital storytelling were partially focused on digital stories | Data collection and knowledge translation |
| Morgan et al., 2014 [33], Canada | Huu-ay-aht First Nations youth N = 8 | Community | A sub-study of a larger study that explored community views on environmental sustainability, community health and well-being. This sub-study aimed to explore Huu-ay-aht youth's perspectives of their social, physical, and cultural context following the establishment of a modern Treaty (Maa- nulth Treaty): digital stories focused on what youth wanted the Maa- nulth Treaty to bring to their community. | Indigenous | Larger project was guided by community-based participatory research The digital storytelling analysis of this sub- study used a modified grounded theory approach, as well as semiotic and audio discourse analysis | Approach not clearly specified, integration of Indigenous cultural protocol, reference Storycenter (Lambert, 2006) and Burgess (2006) 2 full week workshops, process driven by Indigenous youth participants | Digital stories were analyzed inductively, using a modified version of grounded theory (coding), followed by multidimensional analysis using semiotic (Rose, 2007) and audio discourse (Bauer & Gaskell, 2000). | Data collection and knowledge translation |
| Paterno, Fiddian- Green et al., 2018 [34], US | White/non-Latina, peer mentors N = 5 | Community | To understand substance use and recovery from peer mentors recovering from perinatal substance use disorder (SUD) who were working with pregnant women currently experiencing SUD. Concurrent focus on the feasibility of using digital storytelling to understand this health experience | Qualitative paradigm | Qualitative approach, reference grounded theory (Corbin & Strauss, 2014) | StoryCenter approach, 3 days of workshops | Digital stories were analyzed using intertextual transcription | Data collection and knowledge translation |
| Paterno, Low et al., 2019 [35], US | White/non-Latina, peer mentors N = 5 | Community | To describe the experiences of addiction in pregnancy, recovery, and subsequent peer mentoring of pregnant women with active substance use disorders | Constructivist | Qualitative approach with constructivist grounded theory analysis | StoryCenter approach, 3 days of workshops | Digital stories were analyzed using intertextual transcription | Data collection |

(continued)

Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|---|---|-----------|--|--|---------------------------------|---|---|---|
| Schurer et al., 2015 [36], Canada | First Nations residents (youth and adults) and healthcare workers N = 14 | Community | To explore First Nations (rural) perspectives on animal management and educate rural health workers in Indigenous communities' approach to animal management (dogs) | Participatory paradigm | Thematic analysis | Digital storytelling approach unclear, researchers created digital stories based on themes (determined by researchers, participants) and participant photographs. Researchers presented four digital stories, received participant feedback. Referenced Gubrium (2009a), and Lambert (2006) | Digital stories not analyzed; created by researchers following data analysis. Researchers created digital stories which were taken back for participant feedback with subsequent modification | Data collection |
| Sehrawat et al., 2017 [37], US | Four college students and four older people. N = 8 | Community | Intergenerational storytelling project designed to partner college students with older people through digital storytelling | Participatory, identified digital storytelling as the 'conceptual framework' | Participatory action research | Storycenter approach, weekly meeting for 6 weeks. Fourth week was a full day digital storytelling workshop | Digital stories not analyzed or described. Analysis focused on participant impact/ experience of digital storytelling process and social connectedness between participants created by digital storytelling | Data collection |
| Treffry-Goatley et al., 2016 [38], South Africa | Black South African citizens N = 20 | Community | To explore HIV/ Antiretroviral therapy (ART) adherence in a low-resourced, rural community of high HIV prevalence, and identify individual/structural factors that either challenge or support adherence | Inductive, qualitative (not explicitly stated) | Narrative and thematic analysis | Storycenter approach, 4 days of workshops | Digital stories analyzed with narrative and inductive thematic analysis, which included a multimodal component | Data collection and knowledge translation |

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Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/ philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|--|---|-----------|--|--|--|---|--|--|
| Treffry- Goatley et al., 2018 [39], South Africa | Impact survey completed by community members: (N = 852), post- intervention (N = 860) Focus group participants: N = 65 (public, healthcare workers, community advisory board members) | Community | 1. Support people to share their ART experiences through digital storytelling 2. Create a DVD anthology of digital stories 3. Use DVD to engage the public, provide information and stimulate dialogue about ART, including the role of community support | Community engagement | Mixed-methods evaluation | Storycenter approach, 4 days of workshops (5 day period, day off between workshop day 2 and 3) | Digital stories not analyzed in this report (Phase II of larger study). Digital stories collated into a DVD for an impact evaluation | Data collection and knowledge translation |
| Walsh et al., 2009 [40], Canada | Homeless women N = 20 | Community | 1. To better understand the nature of home according to women who are homeless. 2. To document, enable and empower participants to express their concerns and advocate for their needs | Community based, participatory | Community-based participatory research | Digital storytelling approach not described, referenced Tucker (2006) in defining digital storytelling, and describing it as a qualitative method | Text of the digital stories were analyzed; digital storytelling was one of five sequential participatory methods used | Data collection |
| Ward & deLeeuw, 2018 [41], Canada | Indigenous youth N = 8 (13 youth signed up, but only 8 attended digital storytelling workshop, and completed a digital story) | Community | Digital storytelling was used to understand the Indigenous youth perspectives of online mental health resources identified in part one of the study | Explicit shifting of power from researchers to youth participants. Theoretical Framework: social determinants of health, strengths- based approach | Action based research | Digital storytelling approach not described, 3 days of workshops. Referenced Gubrium (2009a) | Digital stories were analyzed after transcription; specific analysis process for digital stories unclear. Data analysis (overall): thematic analysis and review by youth co- facilitators identified | Data collection |
| Waycott et al., 2017 [42], Australia | Housebound people (home visits) N = 3 | Community | To understand how creating and sharing digital stories in the community might foster self-expression, and facilitate a sense of connection between housebound people with the community | Participatory, emancipatory stance that was described as political and ethical | Participatory methods | Digital storytelling approach not specified, the researchers created digital stories following 3 home visits. Referenced Gubrium et al. (2014) to define digital storytelling | No specific analysis of the digital stories, or findings related to the digital story content | Data collection and knowledge translation |

(continued)

Table 2. (continued)

| Authors (Year), Country | Population group and sample size | Setting | Aim or research question(s) | Theoretical/philosophical perspectives | Study design | Digital storytelling approach (characteristics of workshop) | Analytic process with DSs | DS Use (data collection, knowledge translation or both) |
|--|--|-----------|--|--|---|---|--|---|
| Wexler, Eglington, & Gubrium, 2014[43], US | Alaska Native young people from 12 villages N = 196 | Community | 1. Explored the use of digital storytelling as a means to assist youth to express themselves, highlight their strengths, and develop mastery through technology skills. 2. To share the digital stories with peers and family through community screening | Positive youth development framework/Health promotion project (Project Life) | Grounded theory (GT) | Digital storytelling approach not clearly specified, 18 5-day workshops in 12 rural Alaskan villages over 2 years, 3hrs daily after school. Referenced Lambert (2010), Gubrium (2009a), Gubrium and Turner (2011) | Digital stories were analyzed through coding, individual/group story watching and memo writing; 31 exemplary digital stories identified and coded using a modified GT approach (Strauss & Corbin, 1998) as well as multimodal, intertextual transcription (Gubrium & Turner, 2011) | Data collection and knowledge translation |
| Wexler et al., 2013 [44], US | Alaskan native youth N = 299 | Community | 1. Explored the use of digital storytelling as a means to assist youth to express themselves, highlight their strengths, and develop mastery through technology skills. 2. To share the digital stories with peers and family through community screening (this report focused on an exit survey and interviews with participating youth focused on their experience of the digital storytelling project) | Positive youth development framework/Health promotion project (Project Life) | Descriptive analysis of evaluation data | StoryCenter approach; project staff travelled to 12 Alaskan rural communities annually for 4 years, offered 5-day digital storytelling workshops that occurred for 3 hour periods every day after school | Digital stories were analyzed in a corresponding article [43], not described in this report | Data collection and knowledge translation |
| Wilson et al., 2017 [45], New Zealand | Māori caregivers of an older relative at the end of life (kaumātua) N = 8 | Community | To explore Māori participants' views on the usefulness of digital storytelling as a research method within palliative care, from an Indigenous perspective | Constructivist paradigm | Qualitative, Indigenous methodology | StoryCenter approach, 3 days of workshops; integration of Māori cultural protocols | Digital stories themselves were not analyzed (focus on the digital storytelling process, digital storytelling as a culturally adapted method) | Data collection and knowledge translation |
| Wilson et al., 2015 [46], Canada | Youth participants of Indigenous ethnicity and of African Caribbean ethnicity (18-25 yrs) N = 9 | Community | Explores the decolonizing potential of collaboration between Black and Indigenous youth in the context of HIV | Transformative paradigm (Chilisa, 2012) | Participatory action research | Digital storytelling workshop approach not specified as digital stories were developed in earlier projects, utilized in focus groups. Referenced Gubrium (2009a) in defining digital storytelling | Digital stories were not directly analyzed; digital stories used in two 'talking circles' (also called focus groups) to encourage dialogue | Data collection |

the included studies [3, 11, 17, 21, 24, 27, 28, 30, 32, 36, 41-43, 46] with other researchers adopting the work of *Creative Narrations* [4], or researcher developed digital storytelling protocols [5, 10]. (see Table 2).

Overall, the articles lacked detailed descriptions of underpinning theories, frameworks, and models for research using digital storytelling as a method. Where detail was provided, authors described a culture centred theoretical framework [9], a social support and health behaviours model [35], a model of health promotion and social determinants [10], social determinants of health with a capacity building lens [41], feminist theory [1], historical trauma and Indigenous epistemology [2], philosophical hermeneutics and narrative theory [25, 26], and transportation theory [4]. Missing, however, was detail on how these theories, frameworks, and models were enacted. Some authors [6, 7, 39] cited Freire (1996) to reinforce the potential of digital storytelling to challenge power, politics, social structures, and lives of the oppressed. Humanistic nursing theory was used in one study to support the notion of digital storytelling as a unique, reciprocal encounter [14].

Honouring Local and Cultural Knowledge. The importance of digital storytelling in “rendering...discounted local knowledge as relevant by working with marginalized communities to produce their own stories”, acting to recalibrate “damaging and disempowering conversations on social health and wellbeing” [15] (p. 291) was highlighted by Gubrium and colleagues. For example, with Indigenous communities ($n = 14$), digital storytelling reflected and honoured ancient Indigenous oral traditions [5, 12, 20, 33, 36]. The aim was to teach, educate, document history, and transmit cultural knowledge to future generations [10, 11, 20-22, 33]. Indigenous peoples [10, 11, 33] shared their health experiences [5, 19, 22, 41], elevated Indigenous knowledge and practices [10, 12], and reframed stigmatizing, colonized narratives [11, 32, 40, 43, 44, 46] in a safe, engaging space [12].

Capturing Voice through a Process-Oriented, Flexible Method. The digital storytelling process occurred over a period of time, and often in a group format. The varied and unique temporal elements allowed for the processing of experiences over hours, days, or even weeks. Workshop duration varied from 6 hours [20], to 2 days [31], 3 days [6, 8, 13, 34, 35, 41, 45], 4 days [1, 2, 9, 15, 16, 27, 38] or 5 days [12, 39, 44], to a week-long workshop or retreat [11, 32, 33]. In some studies, digital stories were produced over a series of meetings instead of an intensive workshop [25, 36, 37, 42]. For example, some participants took part in two-hour meetings over 5 weeks [4] or three sessions [26]. In other studies, a series of after-school workshops were held [7, 43]. Participants in Fletcher and Mullet’s [10] three-day workshop reconvened after they had time to work on their stories in their communities.

In the studies reviewed, digital storytelling was facilitated by various people, including researcher(s) or research staff [1, 2, 26, 34, 35, 41-43], staff from a professional digital storytelling organization [1, 9, 30], or community members alongside research staff [10, 16, 17]. Several authors stated that the facilitator had received training through *StoryCenter* [14, 16, 34, 35]. In most articles, there was a lack of detail about facilitator training [2, 5, 12, 18, 24, 26, 29, 30, 39, 41, 42] or the facilitators were not described [8, 13, 32, 40, 46].

Some researchers asked participants to prepare beforehand to enhance the workshop or make the timeline more feasible [5, 11, 32]. For example, in one study, participants were provided with information and tools to collect images 4 months before the workshop and participated in regular teleconference calls to prepare [32]. Martin and colleagues [31] held two pre-workshop individual interviews with participants to provide a forum for sharing traumatic stories in a safe and supportive environment before the group workshop.

Before the digital storytelling workshop, some researchers used a photovoice or photo-elicitation phase [20, 28, 30]. For example, in one study, young people were given cameras to take photos of what represented strengths and challenges in their community. They chose 20 images, produced a 250-word narrative, and created a digital story [20].

Many facilitators offered prompts that guided the storytelling process [1, 4, 6, 13, 17-19, 21, 24, 26, 35]. To illustrate, Flicker and colleagues [11] asked: “Can you tell us a story about a time when HIV/AIDS impacted your life?” (p. 328). Ward and colleagues [41] worked with youth to develop the following question prompt: “What does mental health/wellness mean to you?” (p. 21), and Morgan and colleagues [33] asked participants to tell a story that would demonstrate what they wanted the Maa-nulth Treaty to bring to their community.

Central to digital storytelling was shaping the story which involved selecting a story, refining it, writing a script, and recording it. The process often involved individual reflection, writing, group discussion, and feedback, highlighting the ordinary voice of participants [3] (p. 299) and for some, selecting and refining a story involved a story circle. Each participant shared story ideas with the group and received feedback from the facilitator(s) and other participants [4, 9, 24, 34, 37, 38]. Participants often wrote a short script (e.g., 250-350 words), edited it with the support of the facilitator, and, once satisfied, digitally recorded it [6, 14, 17, 26, 37, 38].

Selecting and layering multimedia materials (e.g., photos, video clips, music, sound effects, text) onto recorded stories allowed participants to muse about their experiences and metaphorically express nuanced, complex experiences [4-6, 14, 24, 26, 28]. Authors described using various video editing platforms, including iMovie [10, 25], Moviemaker [20], iPads [23], and WeVideo [37] to assemble stories. This process allowed for skill development in video editing [32], and several authors discussed the importance of providing tailored technical support according to the participant’s learning styles

and technical abilities [4, 6, 12, 33]. Once completed, digital stories were often shared and celebrated with the group [4, 6, 9, 17, 21, 37].

In a few studies [14, 19, 25], researchers used one-on-one digital storytelling sessions instead of group workshops. In one study [10], mini-stories were created with only a few photos to facilitate work within a short timeframe.

Diverse Positioning in Analysis. The digital stories were analyzed in twenty-two studies [1, 3, 9, 11-16, 18-20, 24, 28, 31, 33-35, 38, 40, 41, 43]. Within this group of studies, 11 described a multimodal analysis process focused on the text of the created stories and additional aesthetic components, including audio and visual data [1, 9, 13, 15, 16, 24, 33-35, 38, 43]. Gubrium and colleagues were the only research team to describe a specific digital story analytical approach [1, 9, 15, 24, 34, 35, 43]: *intertextual transcription method* (Gubrium & Turner, 2011). In this method, still images from digital stories were combined with the transcription of voiceover recordings, “notes on affect, features of visual objects, text on screen, music, and special effects” to facilitate understanding and “meaning across different modalities of visual, chronological, aural and oral, emotional, gestural, and textual elements found in a digital story” (Gubrium & Turner, 2011, p. 473). There were two additional studies that used a specific multimodal analysis process: one was guided by narrative and thematic analysis of the stories [38], and the other a modified version of grounded theory that integrated semiotic (Rose, 2007) and audio discourse (Bauer & Gaskell, 2000) [33].

There were a group of articles where the analysis focused on the digital storytelling workshop experience [2, 4, 6, 7, 45]. In one study, a case study approach was informed by process evaluation [6], with the remainder using a culturally sensitive thematic analyses [2, 4, 45]. The primary source of data in these studies were post-workshop qualitative interviews [2, 4, 6], post-workshop questionnaires [45], researcher discussions about the workshop facilitation process [6], recruitment documents, and attendance records [6].

Evoking Change through the Creation of a Safe Space for Story Sharing. Incorporating digital storytelling in research resulted in wide-ranging impacts on participants, research processes, and knowledge development. Challenging dominant discourses and power were common across most studies. Beltrán and Begun [2] described the method as transformative, healing, and disruptive, allowing participants to articulate and understand traumatic experiences. The term ‘tool of identity’ (Hannerz, 1983) was discussed by Eglington and colleagues [7], suggesting that involvement in the digital storytelling process enabled youth to engage with personal, cultural artifacts that were important in mediating their lives. The impact of a safe space for story sharing resulted in community connectedness [4, 6, 46] and acted as a means of catharsis for participants [8]. Fiddian-Green and

colleagues [9] described the learning of technical skills that could be applied to other contexts as an agentic process. One study described the burden related to the complexity of the method process [28] and another the intense emotional labor participants engaged in as they worked to shape their digital story [31]. Overall, participants were empowered as they experienced increased confidence with technology [4, 6, 8, 41].

The concept of change was explicit in some articles, such as Fiddian-Green and colleagues [9]. They discussed social change praxis in their study of sexuality and identity with Puerto Rican youth. Only a small number of authors examined the impact of digital stories on health professionals, including Laing et al. [26] in oncology, Limaye et al. [30] in maternal and child health in Peru, and Waycott et al. [42] in a community setting. Cordova et al. [5] posited that sharing stories with family members might increase knowledge, support, and responses from others. Flicker et al. [11] stated that digital storytelling could be a catalyst for community health promotion. The potential for digital stories to disrupt thinking amongst public and policy makers was identified by Goodman [14]. Digital stories as a lobbying tool were described in a study that challenged social security policy discourse in Northern Ireland [23].

Ethical Complexity. Ethical approval, the use of ethical procedures, and/or an informed consent process was reported in 32 of the 46 included articles [4-6, 10-13, 15, 16, 18-23, 25-31, 33-36, 38-42, 44]. Only a small group of researchers articulated consent processes specific to digital storytelling, which included: signing a release form unspecified in purpose [34]; or for the use of digital stories in education, community, or knowledge translation activities [4, 5, 25, 30, 39]; a photo release for the use of other people’s photos in the digital story [30, 35]; or consent/explicit permission to use participants’ names [11, 24]. Researchers in only two studies identified the use of a consent process for sharing digital stories online [12, 30].

Ensuring emotional safety when using digital storytelling was identified as an ethical priority. Emotional support and security for participants occurred through the following strategies: psychological pre-screening counselling support [31], an introductory session to explain ethical/consent processes [6], allowing adequate time for story creation [6], support from expert facilitators [6] or a professional counsellor during the digital storytelling workshop [31], as well as fostering a relationship with participants [2, 3, 31, 45]. Emotional support for participants outside the research process was only noted in three of the reviewed articles [13, 18, 31]. In Haffejee and Theron’s [18] study with adolescent girls, the researchers required participants to have a debriefing session with a mental health professional not involved in the research. In Martin et al.’s [31] study with young women who had experienced dating violence, support was provided from a hired professional counsellor

during and after the digital storytelling workshop. Psychological pre-screening and follow-up counselling services were available for potential participants who were in psychological crisis [31].

The ethical importance of allowing participants to hold ownership and control over their digital story was identified in a small number of studies [1, 6, 10, 12, 28, 31, 39], with fewer addressing how and where the digital story was shared following its creation [1, 2, 12, 25]. The ethical practice of ownership and choice was exhibited in the studies through the digital story remaining the property of participants [1, 6, 10, 12], ensuring participants maintained control over the conceptual and methodological aspects of the research process [41, 45], control over whether the digital stories were shared with the public/larger audiences [1, 2, 25], or social media [2], as well as the use of participants' real names rather than a pseudonym [11, 30].

Authors of articles with Indigenous peoples [2, 5, 7, 10-12, 20-22, 32, 33, 36, 41, 43-46] or other cultural groups [1, 4, 8, 9, 15-18, 24, 27, 29, 30, 38, 39] gave attention to culturally sensitive ethical considerations. These included the specific adaption of cultural protocols in the digital storytelling process [12, 33, 45], a heightened sensitivity to relationality [2, 45], the inclusion of Indigenous/cultural members in the research team [4, 10, 21], consultation with tribal members during the research process [4, 5, 7, 10, 11, 20-22, 33, 43, 45], consultation with cultural advisory groups [5, 11, 18, 33, 45], the integration of cultural ceremony [2, 12] and explicitly addressing colonialism within the inquiry process [33].

The use of a specific ethical framework was only described in one study. Gubrium, Lowe, and colleagues [17] analysed the ethical complexities they encountered using the work of Gubrium et al. (2014).

Discussion and Implications

Interest in digital storytelling as a method in health research has increased significantly. Previous digital storytelling reviews have focused on specific populations or disciplines (Botfield et al., 2018; Chan & Sage, 2021; De Vecchi et al., 2016; Wu & Chen, 2020), or have examined the use of digital storytelling more generally (de Jager et al., 2017). Our review extends previous reviews by being the first to focus on the quality of reviewed articles, and process, impact, and ethical considerations of digital storytelling in health research to meet our review aim. The conduct of our review aligned with our published protocol (Rieger et al., 2018).

The expressive components of digital storytelling were documented across most studies, with authors describing it as an aesthetically engaging arts-based method. While most authors drew on Lambert's process (2006, 2009, 2010, 2013), which has been well described, precise detail on how researchers enacted this process was limited or absent. Most authors echoed Gubrium and colleagues (Gubrium, 2009a; Gubrium et al., 2019; Gubrium et al., 2018) in describing

digital storytelling as a method for eliciting rich, affective, and nuanced data to chronicle healthcare experiences in the context of structural disadvantage. The creation of a safe space enabled participants to explore and challenge dominant, disempowering discourses. Terms such as transformation, healing, and disruption were commonly used, with authors describing how lives were mediated and communities connected. While authors have identified digital storytelling as a catalyst of change, only a paucity of literature has explored the full potential of digital storytelling in knowledge translation (de Jager et al., 2017; De Vecchi et al., 2016). Most authors articulated the impact on individuals, with limited consideration of the effect of knowledge translation beyond academic publications.

Many authors described digital storytelling as an impactful and culturally sensitive method applicable to various groups and populations. In the reviewed studies, diverse cultural groups were considered; however, Indigenous communities held a particular affinity with digital storytelling due to their connection with the ancient tradition of oral storytelling (Cordova et al., 2015; Fontaine et al., 2019; Holliday et al., 2018; Morgan et al., 2014; Schurer et al., 2015) and the centrality of Indigenous ways of knowing (Archibald, 2008; Archibald et al., 2019; Kovach, 2021; Rieger et al., 2020, 2021; Wilson, 2008).

A general reference to ethics approval, ethical procedures, and consent related to digital storytelling was found in 32 of the reviewed studies. A much smaller group documented ethical considerations specific to digital storytelling. Where ethics were considered, most authors only made cursory mention of strategies to ensure emotional safety, consent processes for images and story release, story ownership, and specific cultural protocols to inform sound practice. Gubrium et al. (2014) state that as innovative methods such as digital storytelling emerge, so too do new ethical issues. They provide a useful summary of ethical considerations and reinforce that ethical conduct extends far beyond institutional approval. While they have called for robust dialogue and appraisal of contextually focused ethical practice in digital storytelling, their calls have gone largely unheeded.

In the studies reviewed, rich data were collected in innovative ways. However, there was an overall lack of detailed descriptions of theories, conceptual frameworks, or models to underpin digital storytelling as a research method. Rice and Mündel (2018) argue that story is both method and methodology and situate their work in activist arts traditions and critical arts-based research. Similar to Rice and Mündel (2018), the authors of articles in our review provided insight into the intersecting and oppressive factors influencing participants' health and access to healthcare. However, the authors of only one study explicitly identified the use of arts-based research methodology (Martin et al., 2019). We argue that philosophical positioning is essential for advancing digital storytelling as a rigorous method with a solid theoretical grounding. There remain differing views on whether digital

Table 3. Key Recommendations for Digital Storytelling as a Method.

| Digital storytelling as method | Key recommendations |
|--|---|
| Research Methodology and Philosophical Assumptions | <ul style="list-style-type: none"> • Articulate a philosophy and qualitative research methodology and discuss the congruency/incongruency with digital storytelling • Discuss any modifications made to the digital storytelling process based on the chosen research methodology/philosophy |
| Theoretical Lens | <ul style="list-style-type: none"> • Identify/describe the theoretical lens adopted, and provide a rationale for the use of that theory in the context of digital storytelling • Specify how the theoretical lens was enacted across the research inquiry |
| Digital storytelling process | <ul style="list-style-type: none"> • Provide a definition of digital storytelling and describe the digital storytelling approach used • Describe any context or methodology specific modifications with rationale • Provide technical support that is tailored to participant abilities and learning preferences • Articulate the timing/nature of interaction with research participants • If preparation occurred prior to the digital storytelling workshop or meetings, clearly identify, describe and provide a rationale for the specific preparatory elements offered. • Identify where in the research process digital storytelling was used, and provide a rationale |
| Recruitment, role and preparation of participants | <ul style="list-style-type: none"> • Describe recruitment processes used, as well as how participants were prepared for engaging in digital storytelling prior to research participation • Describe how participants were positioned and involved across the research process |
| Training of researchers, and digital storytelling facilitators | <ul style="list-style-type: none"> • Identify and describe who facilitated digital storytelling and what specific training the facilitators received |
| Create an emotionally safe space for storytelling and story sharing | <ul style="list-style-type: none"> • Provide a thoughtful orientation to build relationship and safety • Ensure and articulate the psychosocial support provided for participants across the research process • Report experiences of emotional distress/burden as well as those of transformation and/or healing • Allow participants to choose if/how they share their digital story with researchers, other participants, and in knowledge translation • Offer a private, safe physical space for digital storytelling, away from contexts of healthcare/trauma • Integrate debriefing processes and document participant responses |
| Research analysis | <ul style="list-style-type: none"> • Articulate if and how the digital stories were analyzed, and who conducted that analysis (researchers, participants, community members/advisory council members) • Provide a clear rationale for your choice to analyze the digital stories and how digital stories informed/were considered in the context of other collected data • If the digital stories are analyzed, specify how the multiple aesthetic components of the digital stories and the creation process was accounted for • Explicitly identify congruencies/incongruencies between the research methodology, and the analysis of the digital stories |
| Impact | <ul style="list-style-type: none"> • Articulate processes and experiences of change identified by participants, and observed by facilitators, paying particular attention to the contribution of digital storytelling as a method |
| Participant ownership of their digital story across the research inquiry | <ul style="list-style-type: none"> • Ensure the digital story remains the property of participants • Ensure participants maintain control over if/how their digital story is shared with the public/community or on social media • Allow participants to choose whether their contributions are recognized with their real name or a pseudonym |
| Consent processes for digital storytelling in health research | <ul style="list-style-type: none"> • Consistently report processes of ethical consent/approval • Use and report consent processes specific to digital storytelling, which may include: <ol style="list-style-type: none"> (1) consent specific to digital storytelling creation/workshop (2) photo release for the use of other people's photos in the digital story (3) consent/explicit permission to use participants' names (4) consent for the use of digital stories in education, community, or knowledge translation activities (5) consent for sharing digital stories online |

(continued)

Table 3. (continued)

| Digital storytelling as method | Key recommendations |
|--|---|
| Cultural adaptations to consider when using digital storytelling | <ul style="list-style-type: none"> • Articulate any cultural adaptations made to the digital storytelling process (i.e., cultural protocols, cultural ceremony, cultural advisory council) • Specify who (researchers, research participants/partners, others) guided the decision-making about the adoption of cultural adaptations • Report the impact/participant experiences of integrating cultural adaptations into the digital storytelling process • Describe any challenges encountered or modifications needed when using digital storytelling in diverse cultural contexts |

storytelling is a method, a methodology, or both. Future critical analysis should focus on a distinction and careful articulation of the method of digital storytelling and specific methodologies in which to situate this emerging, arts-based method.

Arts-based research methodology, informed by expressive arts philosophy and theory, may be useful in further developing digital storytelling as a method, given its grounding in aesthetic ontology and epistemology (McNiff, 2018), poly-aesthetic theory, and intermodal theory (Knill et al., 2003; Knill, 2005). McNiff (2018) argues that artistic inquiry (arts-based research) is a fundamental way of knowing and advocates “staying close to artistic ways of knowing” (p. 22) throughout the research process.

The role of the imagination and the creation of a space for the imagination is foundational to artistic inquiry (Knill, 2005; Levine, 2019; McNiff, 2004, 2018; West et al., 2022). In our review, capturing participants’ voices within a creative process enabled important knowledge sharing. Knill and colleagues (2003) argued that imagination is ‘intermodal’, with the expressive arts simultaneously drawing on a diverse array of ancient artistic traditions rather than focusing on a singular creative form. Like the performance artist, an expressive arts researcher strives to understand the interplay or inter-relatedness of texts, sounds, images, and movements, rather than considering these aesthetic components in isolation (Knill, 2005).

While there were some descriptions of multimodal analysis processes employed with digital storytelling, detail was scant. Gubrium and Turner’s (2011) intertextual transcription analysis involves the purposeful consideration of the multiple aesthetic layers evident within digital storytelling, contributing to the meaning created. While Gubrium and Turner (2011) do not describe the congruency of intertextual transcription analysis with specific methodologies, consideration of the layered aesthetic contributions at play in digital storytelling would appear to align with arts-based research methodology.

Limitations

There are inherent limitations associated with a systematic review that can impact reproducibility (e.g., the subjectivity of

study selection and quality appraisals). While subjectivity is an inherent risk in any systematic review, an international team of experienced reviewers, clear team communication, a two-person screening process, verification of data extraction by a second reviewer, and careful training and close supervision of reviewers and study staff have mitigated some of the risks. Although a healthcare librarian conducted the search, studies might have been missed due to the emergent nature of digital storytelling as a research method and resulting in lack of consistent MeSH and other controlled vocabulary. Due to feasibility, only articles in English were included. Finally, peer-reviewed journal word count restrictions may have limited the amount of detail presented about the digital storytelling process in the included articles, thus impacting our analysis and findings.

Future Research

There is a need for future studies to provide in-depth descriptions and reporting of the digital storytelling process, moving beyond simple definitions or statements that a particular process was followed. Examining the meaningfulness and effectiveness of different approaches with diverse groups is needed. While digital storytelling has been used with specific cultural groups, there is a need for more detailed description of method adaptations and congruency with specific qualitative methodologies. For example, when working collaboratively with Indigenous communities, the integration of cultural protocols, ceremony, analytical approaches, and dissemination needs to be further understood.

There is a paucity of literature on the impact of digital storytelling as an arts-based knowledge translation strategy. Rigorous studies are needed to evaluate the effect on education, policy, and practice, and robust methods to assess change, particularly long term. When designing future research studies, greater attention should be given to the study methodology. Arts-based research methodology, informed by expressive arts philosophy and theory (Knill, 2005; Levine, 2019; McNiff, 2018; West et al., 2022), has potential, but its applicability to digital storytelling must be further studied and articulated. Multimodal analysis (e.g., intertextual transcription) appear to be congruent with the purposes of digital storytelling, but this needs examination in different contexts

and with diverse populations. There is a need for further conceptual development of analytical methods that align with different methodologies. As digital storytelling techniques develop, well designed studies focused on all aspects of ethical conduct should be a priority. There is a need to develop robust frameworks to guide safe, ethical research practice.

Conclusion

Our aim was to synthesize knowledge about the use, outcomes, and ethical considerations of digital storytelling as a method in health research. We have articulated key recommendations for the use of digital storytelling as a method based on our review findings in Table 3. While authors espouse the value of digital storytelling, solid evidence and rigorous reporting to support claims are lacking. There remain significant limitations in knowledge related to the purpose, use, and context of digital storytelling and the impact on participants, the research process, knowledge development, and healthcare practice. We have identified a lack of theoretical and conceptual underpinning for digital storytelling as a research method as well as philosophical and methodological incongruence. Analysis is an essential component of research conduct, but little consideration has been given to if and how digital stories should be analyzed. Knowledge development related to the complex and situational aspects of ethics in digital storytelling is overdue. There is a significant risk of the method being embraced without sufficient exploration and consideration of ethical practice in different contexts. Digital storytelling might provide a rich, expressive, arts-based method that echoes storytelling traditions. However, increasing interest and use do not replace the need for rigorous exploration of digital storytelling as a research method. This systematic review is a critical step in developing a strong evidence base, but clearly, further evaluation, knowledge development, and sharing is needed.

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





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Supplemental Material

Supplemental material for this article is available online.

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